

Cotton. (*Gossypium hirsutum*)
Palmer Pigweed (*Amaranthus palmerii*)
Applications of AMS Plus and Spectrum with Liberty®
Weed control and Deposition

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Palmer Pigweed Efficacy with Applications of AMS Plus, 2011

Two trials were conducted in 2011 to demonstrate Palmer pigweed control when Palmer pigweed was larger than label recommendations. Applications of Liberty® herbicide, from BAYER CropScience, were applied alone and tank mixed with Coastal's AMS Plus and Spectrum to > 5 inch tall Palmer pigweed.

Liberty® herbicide's active ingredient is glyphosate and is part of the Liberty® Link crop system including cotton and lists Palmer pigweed size at 3 inches or less for control. AMS Plus from Coastal AgroBusiness is an ammonium sulfate spray additive that enhances herbicide performance by modifying solution pH and water hardness. AMS Plus has been found to promote herbicide uptake in agricultural applications. Spectrum spray adjuvant is a nonionic spray with methylated seed oils and an organo-silicone based surfactant/emulsifier system. Spectrum provides penetration properties superior to crop oil concentrate with the coverage of a nonionic.

The first trial was conducted to evaluate applications of Liberty® applied with AMS Plus versus no AMS Plus. In a second demonstration, a comparison was made with one versus two applications of Liberty® applied with AMS Plus and Spectrum.

A single application of Liberty® applied at 32 oz/A alone did not adequately control Palmer pigweed. Palmer pigweed was not adequately controlled in either treatment, however Liberty® applied with AMS Plus was significantly better than Liberty® applied alone (data not shown). Palmer pigweed control was improved by 50% with the addition of AMS Plus to the spray system. This is important because Palmer pigweed plants do not all germinate at the same time, therefore there are varying plant sizes at application time.

In the second study, Liberty® applications were made starting when the Palmer pigweed was 5 inches in height. The planned second application occurred 7 days later. Liberty® was applied at 29 oz/A in both applications. The tank mix included AMS Plus at 40 oz/A plus Spectrum at 2 pints/100 gallons of water. Liberty® + AMS Plus applied as a single application provided approximately 80% control of Palmer pigweed, but treated plants began to show signs of regrowth by the end of the study. Two applications of Liberty® + AMS Plus provided 100% Palmer pigweed control.

Based on the observations made in these two studies, an application of Liberty® herbicide is greatly improved by the addition of AMS Plus and Spectrum over Liberty applied alone. Weed size was an important factor as well in these studies. Applications of Liberty® herbicide should be applied if Palmer pigweed is <3 inches, according to the label; however, if Palmer pigweed is greater than 3 inches tall the addition of AMS Plus and Spectrum will improve control and an additional retreatment should be considered.

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